108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

These materials are for analysis of sulfur, mercury, and chlorine in fossil fuels.For further information see: SP 260-84 and SP 260-167

See other related links:
Table 106.3 Mercury in Activated Carbon
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***I_r* QC Test & Detailed Example:**

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I_r QC Test & Detailed Example:

108.3(1)- Crude Oil

SRM	Description	Unit Size	Mercury in ug/kg	Sulfur in %	Water in mg/kg
2721	Crude Oil (Light -Sour)	5X10 mL	0.0417	1.5832	*134*
2722	Crude Oil (Heavy Sweet)	5X10 mL	0.1292	0.21037	*99*

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108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

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***I_r* QC Test & Detailed Example:**

108.3(2)- Gasoline

SRM	Description	Unit Size	Sulfur in mg/kg
2294	Reformulated Gasoline (nominal 11% MTBE)	2 x 20 mL	40.9
2295	Reformulated Gasoline (nominal 15% MTBE)	2 x 20 mL	3080
2296	Reformulated Gasoline (nominal 13% ETBE)	2 x 20 mL	40.0
2297	Reformulated Gasoline (nominal 10% Ethanol)	2 X 20 mL	303.7
2298	Sulfur in Gasoline (High-Octane)	5x20 mL	4.7
2299	Sulfur in Gasoline (Reformulated)	5x20 mL	13.8
2716	Sulfur in Gasoline (	5 ampoules x 20 mL	0.44

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108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

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***I_r* QC Test & Detailed Example:**

108.3(3)- Middle Distillates

SRM	Description	Unit Size	Mercury in µg/g	Sulfur in mg/kg
1616b	Sulfur in Kerosene (Low Level)	100 mL		8.41
1617a	Sulfur in Kerosine (High Level)	100 mL		1730.7
1624d	Sulfur in Diesel Fuel Oil, 0.4%	100 mL		3882
2723a	Sulfur in Diesel Fuel Oil	10 x 10 mL		11.0
2724b	Sulfur in Diesel Fuel Oil, 0.04%	10x10 mL	0.034	426.5
2770	Sulfur in Diesel Fuel Oil (40 mg/kg)	10 x 10 mL		41.57
2771	Sulfur in Diesel Fuel Blend Stock	1 bottle x 100 mL		0.102

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108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

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***I_r* QC Test & Detailed Example:**

108.3(4)- Biodiesel B100

SRM	Description	Unit Size	Sulfur in mg/kg
2773	B100 Biodiesel (Animal-Based)	5 ampoules x 10 mL each	7.39

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108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

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***I_r* QC Test & Detailed Example:**

108.3(5)- Di-n-Butyl Sulfide

SRM	Description	Unit Size	Sulfur in %
2720	Sulfur in Di-n-Butyl Sulfide	5 x 4.5 mL	21.91

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108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

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***I_r* QC Test & Detailed Example:**

108.3(6)- Residual Fuel Oil

SRM	Description	Unit Size	Heat of Combustion (in MJ/kg)*	Mercury in ng/g	Sulfur in %
1619b	Sulfur in Residual Fuel Oil (0.7%)	100 mL		3.46	0.6960
1620c	Sulfur in Residual Fuel Oil (4%)	100 mL	(41.46)		4.561
1621e	Sulfur in Residual Fuel Oil (1%)	100 mL			0.9480
1622e	Sulfur in Residual Fuel Oil (2 %)	100 mL			2.1468
1623c	Sulfur in Residual Fuel Oil 0.3%	100 mL			0.3806
2717a	Sulfur in Residual Fuel Oil (3%)	100 mL	(42.29)		2.9957

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108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

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***I*$_r$ QC Test & Detailed Example:**

108.3(7)- Petroleum Coke

SRM	Description	Unit Size	Aluminum Al in mg/kg	Calcium Ca in mg/kg	Carbon C in %	Cobalt Co in mg/kg	Furnash Ash in %	Heat of Combustion (in MJ/kg)*	Hydrogen H in %	Iron Fe in mg/kg	Nickel Ni in mg/kg	Nitrogen N in %	Silicon Si in mg/kg	Sodium Na in mg/kg	Sulfur in %	Vanadium V in mg/kg	Volatile Matter %
2718	Green Petroleum Coke	50 g	16.5	174	*88.99*	*5.79*	(0.18)	(35.76)	*3.47*	290	139.1	*1.23*	(63.00)	*88.6*	4.7030	302	(10.6)
2719	Calcined Petroleum Coke	50 g	58.9	57.7	*97.06*	*18.6*	(0.12)	(32.90)	*0.16*	201.6	204	*1.17*	(138)	*15.1*	0.8877	58.6	(0.54)

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108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

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***I_r* QC Test & Detailed Example:**

108.3(8)- Subbituminous Coal

SRM	Description	Unit Size	Chlorine in mg/kg	Fluorine in mg/kg	Furnace Ash in %	Heat of Combustion (in MJ/kg)*	Mercury in ug/kg	Sulfur in %
1635	Trace Elements in Coal (Subbituminous)	75 g		25.9	(4.6)		10.9	0.3616
2682b	Subbituminous Coal (Sulfur, Mercury, and Chlorine)	50 g	*16.1*		*6.32*	*25.66*	108.8	0.4917

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108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

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***I_r* QC Test & Detailed Example:**

108.3(9)- Bituminous Coal

SRM	Description	Unit Size	Chlorine in mg/kg	Furnace Ash in %	Heat of Combustion (in MJ/kg)*	Mercury in ug/kg	Sulfur in %	Volatile Matter %
1632d	Trace Elements in Coal, (Bituminous)	50 g	1142	(7.08)	(32.15)	92.8	1.462	
2683c	Bituminous Coal (Sulfur, Mercury, and Chlorine)	50 g	*1127*	9.870	(30.24)	90.0	1.955	
2684b	Bituminous Coal (Sulfur and Mercury)	50 g	1142	*10.85*	*28.56*	97.4	3.076	
2685b	Bituminous Coal (Sulfur, Mercury, and Chlorine)	50 g	517	*15.94*	*26.94*	146.2	4.730	
2692c	Bituminous Coal (Sulfur, Mercury and Chlorine)	50 g	*1338*	*7.499*		179.0	1.064	
2693	Bituminous Coal (Sulfur, Mercury, and Chlorine)	50 g	369.6	*9.4*		37.3	0.4571	

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I_r QC Test & Detailed Example:

108.3(10)- Metallurgical Coke

SRM	Description	Unit Size	Carbon C in %	Furnace Ash in %	Hydrogen H in %	Nitrogen N in %	Sulfur in %	Volatile Matter %
2775	Foundry Coke	50 g	*91.34*	*5.77*	*0.41*	*1.16*	0.5816	*1.31*
2776	Furnace Coke	50 g	*89.15*	*8.06*	*0.26*	*1.21*	0.825	*0.98*

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